

REMARKS

Claims 1-22, 25, and 27 are pending in the present application. Claims 13-22, 25, and 27 are currently under examination by the Examiner in the present application.

At the outset, Applicants wish to thank Examiner Fronda for the indication that Claim 27 is allowable (paper number 22, paragraph 6). Reconsideration of the outstanding rejections is respectfully requested.

The rejection of Claims 14-22 and 25 under 35 U.S.C. §112, second paragraph, is traversed.

The Examiner has maintained the rejection of the claims under 35 U.S.C. §112, second paragraph. In so doing, the Examiner has clearly misunderstood the “antecedent basis” standard set forth by MPEP §2173.05(e) as it applies to Claims 16 and 22. For the Examiner’s convenience, Applicants **submit herewith** a copy of the relevant pages from the MPEP. From the following explanation, the Examiner can see the explicit recitation of the objectionable terms in Claim 15 from which Claims 16 and 22 depend.

In the rejection of Claims 16 and 22, the Examiner asserts that it is unclear what specific enzyme is desensitized and/or derepressed. We note that Claim 16 depends from Claim 15, which explicitly defines the “enzyme involved in purine nucleoside biosynthesis” that is desensitized as being “a phosphoribosyl pyrophosphate amidotransferase or a phosphoribosyl pyrophosphate synthase.” The same is true with respect to Claim 22, which also depends from Claim 15. Specifically, Claim 15 explicitly defines the “enzyme involved in purine nucleoside biosynthesis” that is derepressed as being “a phosphoribosyl

pyrophosphate amidotransferase or a phosphoribosyl pyrophosphate synthase.” Accordingly, contrary to the Examiner’s assertion, these claims are definite.

Turning to the rejection of Claims 14, 15, and 25, Applicants note that the Examiner has again misapplied the “antecedent basis” standard as the subject matter of these claims are additional limitations not intended to be explicitly recited in Claim 13 from which these claims depend. To clarify the relationship between Claim 13 and Claims 14, 15, and 25, Applicants have amended Claims 14, 15, and 25 to explicitly recite “further comprising.”

Accordingly, Applicants request withdrawal of this ground of rejection.

The objection of Claims 13-22 and 25 as reciting non-elected subject matter is traversed.

Claim 13 provides a method for producing a purine nucleoside by fermentation comprising culturing a microorganism in a culture medium to produce and accumulate the purine nucleoside in the medium, and collecting the purine nucleoside, wherein the microorganism belongs to the genus *Escherichia* and has purine nucleoside-producing ability arising from inhibition of a reaction branching from purine nucleoside biosynthesis, and leading to another metabolite, in said microorganism, wherein said reaction is catalyzed by an enzyme selected from the group consisting of succinyl-adenosine monophosphate synthase, purine nucleoside phosphorylase, adenosine deaminase, inosine-guanosine kinase, guanosine monophosphate reductase, 6-phosphogluconate dehydratase, phosphoglucose isomerase, adenine deaminase, and xanthosine phosphorylase.

On June 21, 2001, the Examiner required an election of single disclosed species from the members of the Markush group above. In electing phosphoglucose isomerase, Applicants directed the Examiner’s attention to the fact that the Examiner’s statement that the species

lack unity of invention is incorrect (see Response to Restriction and Election of Species Requirement filed July 13, 2001). Specifically, Applicants noted that

According to the PCT administrative instructions in MPEP, Annex B, Part I (f), the requirement of the same special technical feature as defined in PCT Rule 13.2 is considered to be met when the alternatives of a Markush group are of similar nature. Here, the enzymes have a common activity because they catalyze the reaction branching from the purine nucleoside biosynthesis. In addition, the compounds of the Markush group belong to a recognized class of chemical compounds in the art to which the invention pertains. All compounds are enzymes.

Moreover, Applicants noted that a search of all the claims would not impose a serious burden on the Office (MPEP §803). Applicants further noted that the International Searching Authority had already examined all of the claims (including the species contained therein) together. Therefore, the Office has not applied the same standard of unity of invention as the International Preliminary Examination Authority (see the International Preliminary Examination Report **submitted herewith**). The Authority did not take the position that unity of invention was lacking in the International application and examined all claims together. Applicants note that PCT Article 27(1) states:

No national law shall require compliance with requirements relating to the form or contents of the international application different from or additional to those which are provided for in this Treaty and the Regulations.

Despite the foregoing, the Examiner maintained the Election of Species Requirement for the members of the Markush group. Therefore, Applicants reminded the Examiner that MPEP §803.02 *compels* examination of all the members of the Markush group in a situation like the present case. MPEP §803.02 states:

If the members of the Markush group are sufficiently few in number or so closely related that a search and examination of the entire claim can be made without serious burden, the examiner *must* examine all the members of the Markush group in the claim on the merits, even though they are directed to independent and distinct inventions. In such a case, the

examiner will not follow the procedure described below and will not require restriction. (*emphasis added*)

Despite the policies controlling examination of applications presenting species in a Markush group, the Examiner again, has maintained the Election of Species Requirement. In so doing, the Examiner notes: “the enzymes require separate searches that have different limits, boundaries, scope, and subject matter.” (paper number 22, paragraph 2)

Applicants submit that the Examiner has misapplied the examination standard provided by MPEP §803.02 for “PRACTICE RE MARKUSH-TYPE CLAIMS.” In the present application, Applicants submit that the members of the Markush group are sufficiently few in number (only nine!!) so as not to constitute a serious burden upon the Examiner. Moreover, Applicants submit that within the context of the present invention, the members of the Markush group are so closely related (i.e., facilitate production of a purine nucleoside by fermentation) so as not to constitute a serious burden upon the Examiner. Therefore, regardless of which standard under MPEP §803.02 is applied, for *each* of the reasons the Examiner *must* examine all the members in the Markush group in the claim on the merits.

Moreover, as stated in MPEP §803.02, “A Markush-type claim can include independent and distinct inventions... where two or more of the members are so unrelated and diverse that a prior art reference anticipating the claim with respect to one of the members would not render the claim obvious under 35 U.S.C. 103 with respect to other member(s). In applications containing claims of that nature, the examiner may require a provisional election of a single species prior to examination on the merits.” In this scenario, two options are available to the Examiner: (1) “[i]f the Markush-type claim is not allowable over the prior art, examination will be limited to the Markush-type claim and claims to the elected species” or (2) “[o]n the other hand, should no prior art be found that anticipates or

renders obvious the elected species, the search of the Markush-type claim *will* be extended.”
(*emphasis added*; MPEP §803.02)

As the record clearly bears out and as further evidenced by the Examiner’s indication that claims to the elected Species (phosphoglucose isomerase) are allowable, Applicants again note that the Examiner is *compelled* to expand the scope of the search to embrace the non-elected Species: succinyl-adenosine monophosphate synthase, purine nucleoside phosphorylase, adenosine deaminase, inosine-guanosine kinase, guanosine monophosphate reductase, 6-phosphogluconate dehydrase, adenine deaminase, and xanthosine phosphorylase (Claim 13). Therefore, the Examiner’s indication that the non-elected Species require “separate searches that have different limits, boundaries, scope, and subject matter” is of no relevance.

In view of the foregoing, no further amendment is believed to be necessary and this ground of objection should be withdrawn.

Applicants submit that the present application is in condition for allowance. Early notification to this effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Stephen G. Baxter, Ph.D.
Attorney of Record
Registration No. 32,884

Vincent K. Shier, Ph.D.
Registration No. 50,552

Customer Number

22850

(703) 413-3000
Fax #: (703) 413-2220